

REMARKS

Claims 1- 21 are pending.

Claims 12-17 and 21 are withdrawn.

Claims 1-10, 13 and 18-20 are rejected.

Election/Restrictions

Examiner states on page of the June 13, Office reply that claims 16, 17 and 21 are drawn to a non-elected invention. The Examiner further explains that Applicant elected the flocculation method recited in claim 13..... Therefore, claims 11, 12, 14-17 and 21 are withdrawn from further consideration as being drawn to a non-elected species.

The Applicants point out that claim 13 reads:

A process according to claim 1 in which flocculation is effected by employing a **water-soluble or water-swellaable polymer** and a **charged microparticulate material**.

As claims 1, 13, 14 and 15 indicate that both the "charged microparticulate material" and the "a water-soluble or water-swellaable polymer" are together used for flocculation, the Applicants do not see how there can be non-unity of invention between 1, 13, 14 and 15. Thus the Applicants believe that claims 14 and 15 should not be withdrawn.

The Applicants also believe that claim 16 and 17 should be examined as both claims 16 and 17 simply describe the water-soluble or water-swellaable polymer defined in claim 1 and elected in claim 13 (along with the charged microparticulate material).

Thus the Applicants request that the Examiner reconsider the withdrawal of claims 14-17 and examine on the merits along with claims 1-10, 13 and 18-20.

35 USC 112,second paragraph

Claim 18 is amended to read "solid residue" and the phrase "by product material" is deleted. This corrects the antecedent basis in claim 18.

No new matter is added.

35 USC 102(b)

Claims 1,3, 5 and 18-20 are rejected under 35 USC 102(b) as being anticipated by Brink, US 4,384,897.

In the last full sentence on page 5 of the Office Action the Examiner refers to the below paragraph in column 10, lines 59-63, of Brink, reading (emphasis added):

"Ferric ion or aluminium salts added to this system, in addition to acting as catalysts also produce flocculent precipitates which aid in **bringing down finely dispersed solids** which are subjected to oxidation in the secondary wet oxidation unit 280."

Based on the above paragraph the Examiner alleges that "Brink teaches that the separation stage is assisted by flocculation employing a flocculation agent consisting of charged microparticulate materials".

The Applicants disagree.

When considering the claimed process as a whole it becomes apparent that the present process is completely different from the process described in Brink.

The only agents described in Brink as having flocculant activity are ferric and aluminium ions.

From column 11, lines 24-43, of Brink, it is evident that the contemplated ferric ion or aluminium salts are the respective nitrates, sulfates or acetates. **Such ferric and aluminium salts are not comprised within the definition of the flocculating agents according to the present application.**

The flocculating agents used according to the present invention are certain polymers or charged microparticulate materials, cf. the first paragraph on page 8 of the present application and the characterizing clause of claim 1. According to the middle of page 10 of the present application the charged microparticulate materials are swellable clays, silica based materials and organic cross-linked polymeric microparticles. **Hence, the flocculating agents according to the present invention are clearly different from those employed in Brink, and, as will be shown below, they serve a different purpose with respect to the substances which are flocculated.**

A further difference between the processes disclosed in Brink and the present application consists in the process stage during which the flocculating agents are added. According to Brink (cf. column 11,

lines 42-43) **the flocculation occurs in the neutralization unit, i.e. after neutralization of the acid.** Contrary thereto, according to the process of the present invention flocculation occurs in separation steps (iii) and/or (vi) of claim 1, i.e. **before removing the acid** by washing in steps (iv) and/or (vii). This results in a further major difference between Brink and the present invention: **What is flocculated according to Brink are the solids resulting from neutralization of the acid (cf. column 11, lines 10-12) whereas according to the present invention the flocculating agents serve to remove the solid residue (cf. the last paragraph on page 7 of the present application).** As also stated at the end of the second paragraph on page 1 of the present application the flocculating agents used in Brink serve to "separate finely dispersed solids resulting from neutralisation of the hydrolysate liquor stream". **Contrary thereto, according to the present invention the flocculation occurs in an acidic medium.** This is also evident from claim 1 of the present application. According to the end of said claim 1 "the separation stage in steps (iii) and/or (vi) is assisted by flocculation of the waste by-product". **Said steps (iii) and (vi) are clearly carried out in acidic medium. This is, inter alia, evident from steps (iv) and (vii) wherein the residue is washed free from the acid.**

Therefore, Brink clearly does **not** anticipate the claims of the present invention and the novelty rejection is overcome.

35 USC 103(a)

Claims 4, 6 and 7 are rejected under 35 USC 103(a) as being unpatentable over Brink, US 4,384,897 in view of Brelsford, US 5,411,594.

Brelsford does not appear to mention flocculants. Hence, it is not apparent what the combination of Brink with Brelsford could add in this decisive respect.

As argued above, **Brink does not suggest to use the ferric and aluminium ions to flocculate the solid residue in an acidic medium.** In addition, the ferric and aluminium ions of Brink serve quite different purposes than the flocculants of the present invention:

From the paragraph in column 10, lines 59-63, and also from column 2, lines 1-5, of Brink it is evident that **the ferric and aluminium ions also serve as catalysts during hydrolysis and that they are recycled.** Similarly, in column 9, lines 11-14, of Brink it is stated that "Certain of the inorganic

substances, especially ferric ion or aluminium, also function to catalyze hydrolysis in Stage I and Stage II hydrolyzers 200 and 202 and wet oxidation in wet oxidation unit 219.

Brelsford does not make up for the deficiencies of Brink, that is **Brink does not suggest to use the ferric and aluminium ions to flocculate the solid residue in an acidic medium.** As Brink is missing the above limitations and Brelsford does make up for these deficiencies, the rejection is improper and overcome.

In conclusion, the claimed process, when considered as a whole, is not rendered obvious by Brink and/or Brelsford.

Claims 8-10 and 13 are rejected under 35 USC 103(a) as being unpatentable over Brink in view of Kuo, US 5,529,699.

The Examiner states that Brink does not teach the use of a water-soluble polymer as the flocculant. Kuo teaches the use of flocculants as aids in pulp and papermaking systems. Thus the Examiner is of the opinion that claims 8-10 and 13 are obvious over Brink in view of Kuo.

The Applicants disagree.

Brinks and Kuo are concerned with very different fields of art. Brink is directed to a method of treating biomass material to produce soluble products of value such as organic acids and ethanol. See column 1, line 1-11 of Brink. Kuo clearly is directed to papermaking processes and more particularly, to retention and drainage aids for use in papermaking systems. See column 1, line 10-17. Thus one skilled in the art of biomass conversion would not look to papermaking for improvements in biomass conversion. The Applicants respectfully submit that the Examiner's obvious to combine is only obvious when viewed with the present application as a blueprint. This of course, is hindsight analysis and an improper standard for a 103 rejection.

Double Patenting

Claims 1-3, 5, 8-10 and 13 and 18-20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4, 5, 7, 8, 10 and 11 of copending Application NO. 10/523,229 in view of Brink.

Claims 1-10, 13, and 18-20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4, 5, 7, 8, 10 and 11 of copending Application No. 10/523,229 in view of Brink and further in view of Brelsford,

Both of the above obviousness double patenting rejections require the reference Brink. As argued above **Brink does not suggest to use the ferric and aluminium ions to flocculate the solid residue in an acidic medium.** As Brink is deficient in this regard, the above obviousness rejection is improper.

Reconsideration and withdrawal of the rejection of claims 1-10, 13 and 18-20 is respectfully solicited in light of the remarks and amendments *supra*.

Since there are no other grounds of objection or rejection, passage of this application to issue with claims 1-10, 13 and 18-20 is earnestly solicited.

Applicants submit that the present application is in condition for allowance. In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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